Targeting pancreatic cancer stem cells with DDR1 antibodies.

Grant Award Details

Targeting pancreatic cancer stem cells with DDR1 antibodies.

Grant Type: Quest - Discovery Stage Research Projects

Grant Number: DISC2-13454

Project Objective: Development of a DDR1 function blocking or degradation inducing antibody (Ab) that can target PDAC stem cells and induce tumor regression as monotherapy or synergize with standard-of-care chemotherapy (FOLFIRINOX).

Investigator:

Name:	Michael Karin
Institution:	University of California, San Diego
Type:	PI

Disease Focus: Cancer, Pancreatic Cancer, Solid Tumors

Human Stem Cell Use: Cancer Stem Cell

Award Value: $1,425,600

Status: Active

Grant Application Details

Application Title: Targeting pancreatic cancer stem cells with DDR1 antibodies.

Public Abstract:

Research Objective

A therapeutic antibody to DDR1 for targeting pancreatic cancer stem cells to overcome resistance to chemotherapy and potentiate the treatment of advanced cancer.

Impact

PDAC is lethal cancer that poorly responds chemotherapy to which it becomes resistant. DDR1 antagonistic Abs should improve chemotherapy responsiveness and may cause tumor regression as a monotherapy.

Major Proposed Activities

- Generate monoclonal antibodies to the pancreatic cancer stem cell protein DDR1.
- Identify those antibodies that are most effective in blocking DDR1 function.
- Confirm that these antibodies preferentially target and destroy pancreatic cancer stem cells.
- Confirm that these antibodies shrink human pancreatic cancers cells grown in mice by killing pancreatic cancer stem cells.
- Select a therapeutic candidate and improve its pharmacological properties.

Statement of Benefit to California:

Pancreatic cancer (PDAC) is lethal and a leading cause of cancer deaths in California. PDAC is often detected too late when treatment prospects are poor, and few patients qualify for resection. African Americans and Hispanics are at a higher PDAC risk with limited access to high quality care. We will develop on antibody for destroying PDAC stem cells and preventing resistance to standard chemotherapy. The product of our research could reduce pancreatic cancer mortality and economic burden.

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